

#### ABSTRACT OF THE DISCLOSURE

The present invention provides a servo driven spot welder where an electric servo actuator moves at least one of two electrodes to and away from the workpiece. The servo driven spot welder includes a controller that allows accurate control of the position of one of the electrodes such that fine adjustments may be made during the welding event. A power source is provided in communication with the actuator, the controller and the electrodes whereby the controller controls the delivery of power to the actuator for movement and to the electrodes for welding. A sensing device is provided between the servo drive and the electrode for sensing the load on the electrode during the welding event. The sensing device senses when a weld nugget forms on the workpiece and expands to cause an increase in the load and then becomes plastic to cause a decrease in the load. The controller operates to receive a signal from the sensing device that is indicative of the load change at the electrodes and to stop providing weld power to the electrodes when the weld nugget becomes plastic.